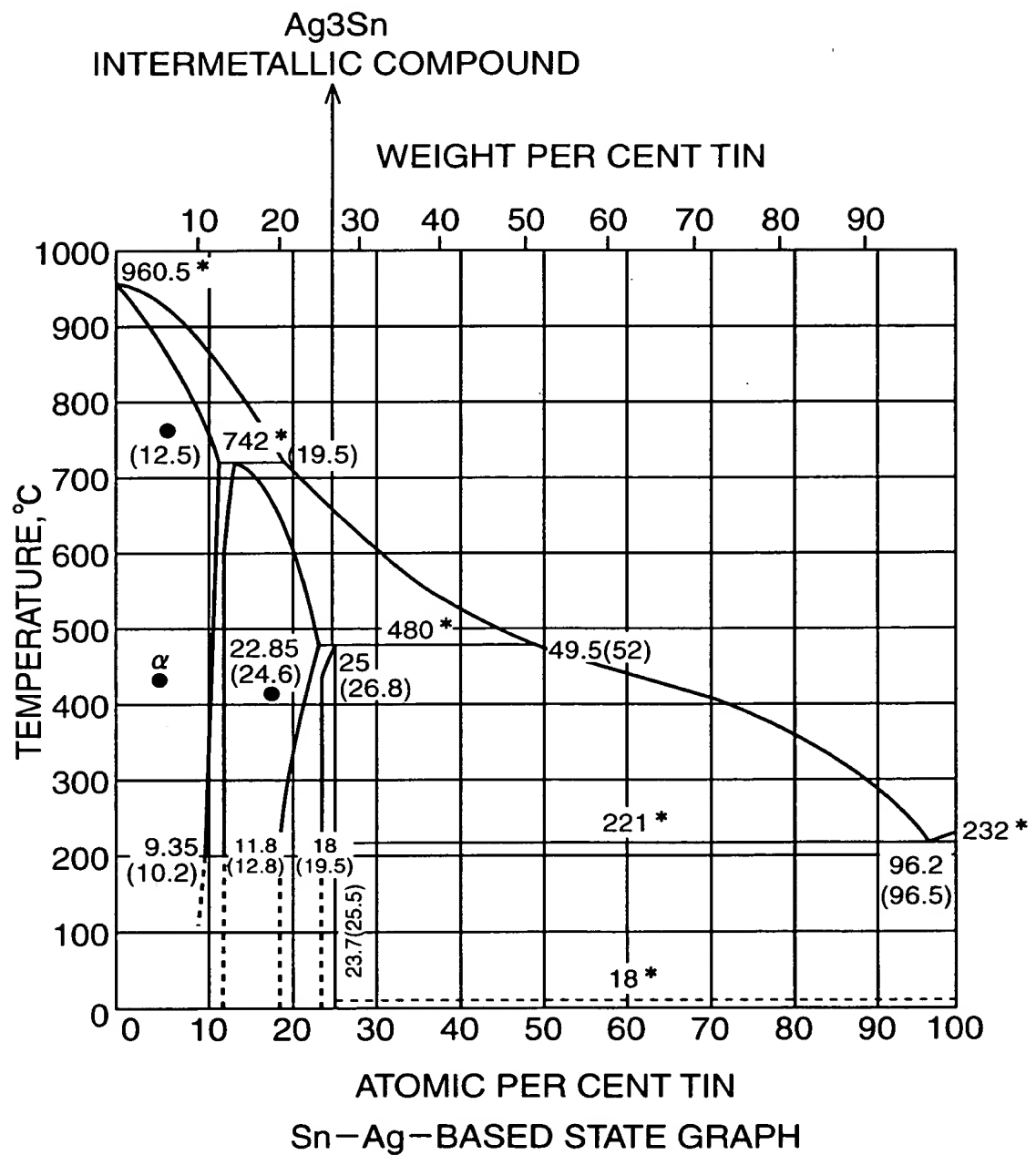
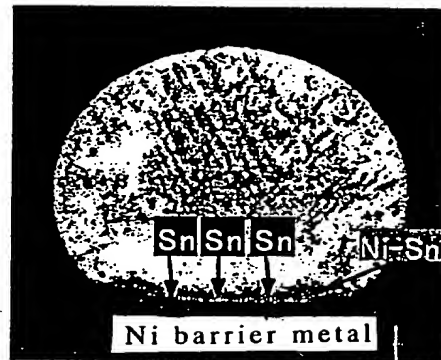


FIG. 1



F I G . 2



REACTION AT THE BONDING INTERFACE

$6\sigma$  VALUE IS CALCULATED

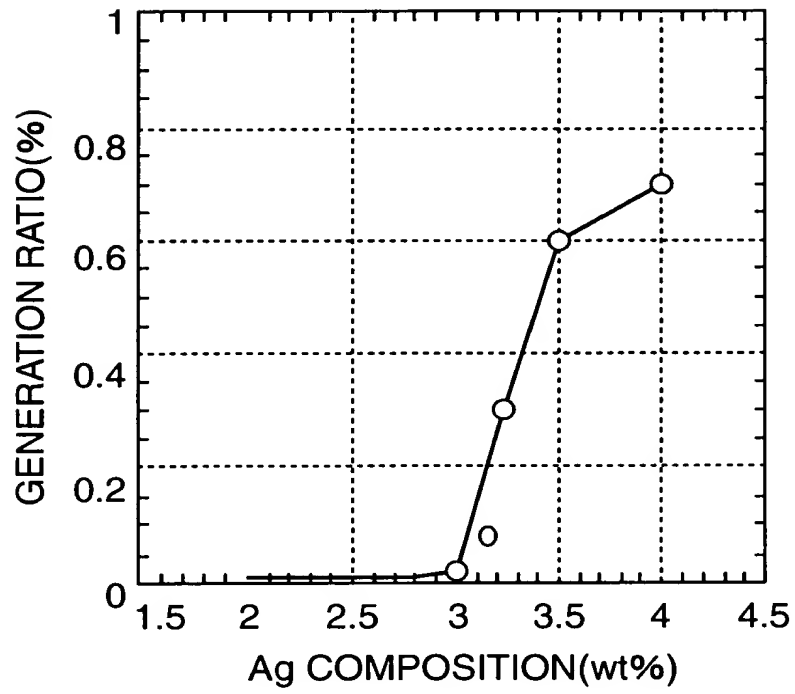
FROM THE NORMAL DISTRIBUTION.

IN CONSIDERATION OF THE Sn REDUCTION  
IN THE SOLDER MATERIAL AT BONDING.



UPPER LIMIT OF Ag COMPOSITION

FIG. 3



PROJECTION SHAPE GENERATION RATIO IN THE SOLDER ALLOY  
OF EACH Ag COMPOSITION

FIG. 4A

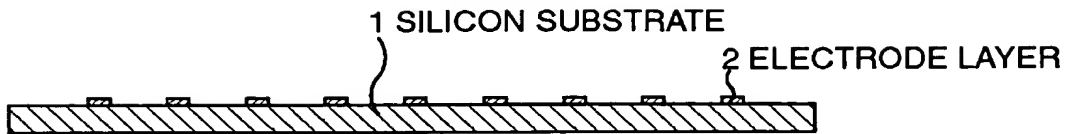


FIG. 4B



FIG. 4C



FIG. 4D

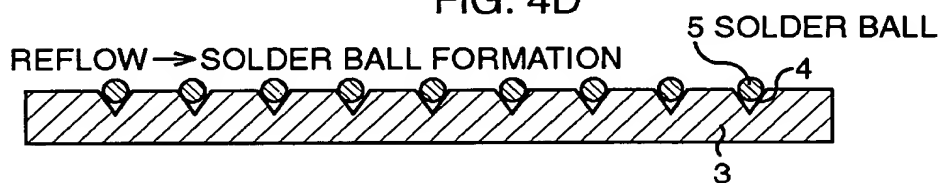


FIG. 4E

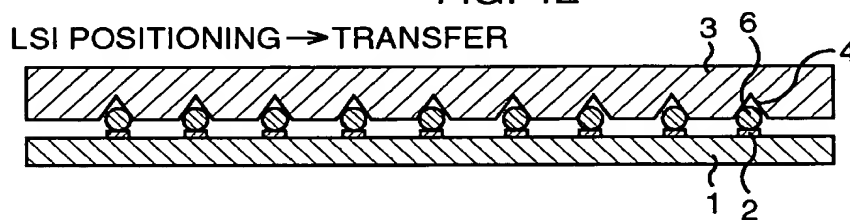


FIG. 4F

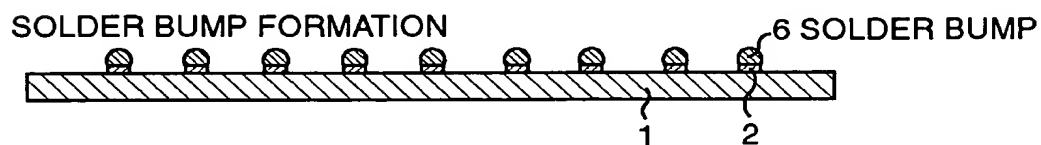
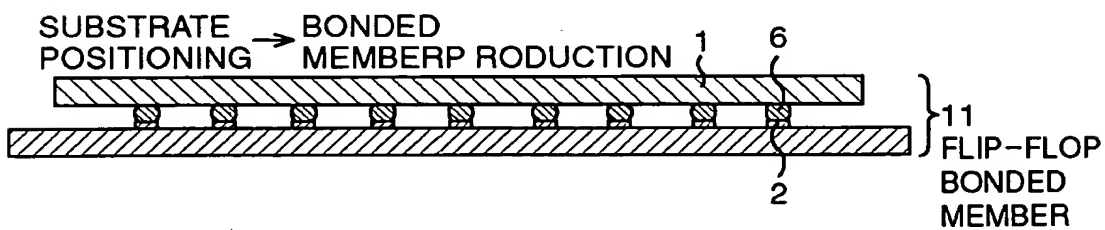


FIG. 4G



DIMPLE METHOD STEPS AND FLIP-CHIP BONDING STEPS

FIG. 5

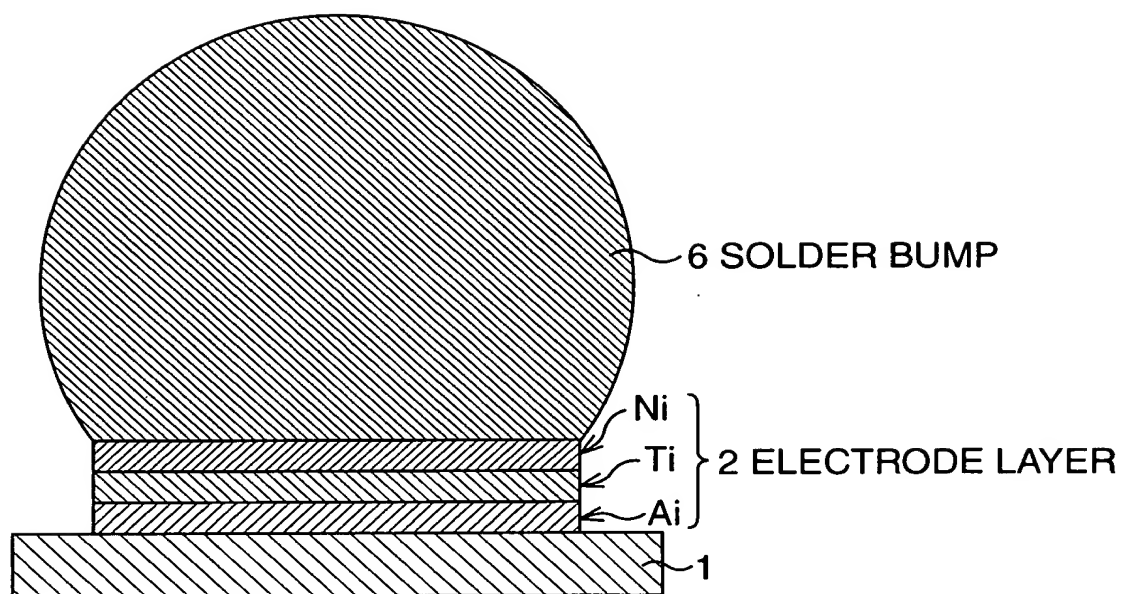
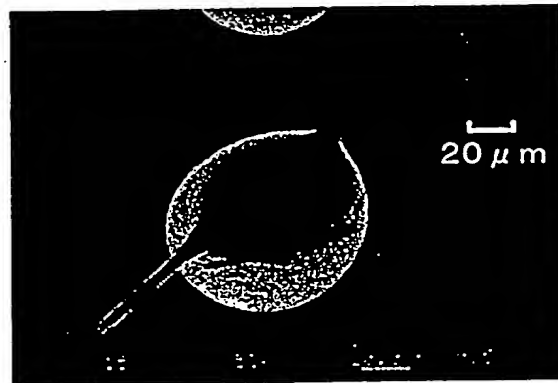




FIG. 7



PROJECTION SHAPE

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